



THE EVENING WORLD'S RADIO PHONE SERVICE COLUMN.

By Capt. Robert Scofield Wood
(D. F. C., M. C., Croix de Guerre
with four palms; formerly Command-
er 167th Squadron, Royal Air Force.)

NOTES ON THE AERIAL.

Practically five out of every ten questions asked by readers are concerning the aerial. And in the majority of cases where there is trouble encountered in the reception of messages, news or music, the aerial is the faulty member of the unit. The following is published for the guidance of all having trouble emanating from this source and for those just entering the realm of radioism. Much has been written concerning this vital section of the receiving set, and possibly too little emphasis has been laid on the importance of the aerial or antenna, as it is called. Remember that no matter how sensitive or near perfection the instrument is without the aerial being fundamentally correct, one cannot expect to get the best results from any receiving or transmitting unit.

One noticeable instance of interference to the aerial was brought to the writer's attention not long ago in the office of a very prominent member of the wireless fraternity. His aerial is just a piece of bell wire dropped over the roof of the building, which is on lower Broadway, and pulled in the window about six stories below. The lead-in is brought to the instrument in the orthodox way. The aerial fouls against the building and several guy wires and stays are elements in the way down. The instrument in use is an exceptionally good one and costs \$300 to assemble. It is in spite of this aerial rather than by its help that this instrument gives any results. Better reception can be had on a little crystal set with a proper aerial than on a good vacuum tube set with an inferior one. There is no way of directing one's attention to the importance of the aerial better than pointing out the extensive overhead apparatus of the largest wireless plant in the world, Radio Central. The Radio Corporation of America has spent over a million dollars to erect this system of wires that are the ears as well as the tongue of the service.

The first to be discussed is the receiving aerial because it is in this type that the majority of fans are interested.

This aerial to give the best reception should be a single wire arrangement of about 120 feet long. It should be hung clear of surrounding objects by about twenty feet, and should for the best results be approximately parallel. This is what is meant by the term, "long, low aerial for best reception." One need not try to hang an aerial on the moon to get good reception. Just make sure that it is reasonably clear of the buildings in your immediate vicinity. This type of aerial can be made of any of the following metals with equally good results. Stranded phosphor bronze is undoubtedly the best substance for aerials, and is about twice the price of stranded copper wire used for the same purpose. Tinned copper also makes good aerial wire. Aluminum wire can also be used for receptive purposes. It is very cheap, but is not as reliable as the other wires. The aluminum wire breaks very easily and corrodes at all junctions where exposed to the weather. All copper wire has a tendency to sag after it has been up a while, but this does not impair its receptive properties.

More than one wire in a receiving aerial of the ordinary type will not increase the intensity of the signals but will increase the receipt by interference. In this connection always remember that to swing your wires parallel to wires carrying heavy electric charges such as car lines or any line electrically driven is inviting unnecessary interference. The way to avoid this trouble is to swing it at right angles to the power lines.

An extensive system of towers for mounting the wires is not necessary. Any two objects such as a high tree and the roof of the house or similar objects will do. In the city any apartment roof is high enough and there is usually plenty of room on the roof to swing a good aerial. A complete article on the construction of the aerial can be found in Radio Column of Jan. 20.

The transmitting aerial is one in which height can not be emphasized too greatly. Remember that in transmission it is the vertical section of the antenna that does the most work. Therefore, the longer this section the better the signal will be. Next in importance is the physical location of the aerial. It is best to erect, wherever possible, the poles on top of some hill and use the antepoles as ground rather than sacrifice altitude for a location where a natural ground can be had. The antenna is just as good as the earth as a ground for most purposes. In the country try to keep the spreader under the wires clear of all trees and shrubbery. In the city the aerial and leads should be kept clear of all buildings as far as possible.

In design the transmitting aerial may be of any convenient shape, preferably the fan shape, and should consist of a series of wires spaced on a spreader about forty feet long. If six wires are used a thirty-foot spreader will suffice, the wires being placed five feet apart. For this type aerial a lead-in of six wires in cage form four inches in diameter gives the greatest capacity with the least resistance to high frequency currents, and is therefore ideal for ordinary amateur transmission. Ar-

range the poles or supports for the aerial so that the lead-in when drawn vertically up with the aerial will be as near 100 feet in length as it is possible to get it. Remember when attaching your lead-in to your aerial that the nearer the end of the fan the greater the capacity and naturally the greater will be the path of return to earth, thus increasing the energy in the vertical section.

W J Z (Newark)
360 Metres

Features for the day:
Hourly news service and music—Every hour from 11 A. M. to 5 P. M.
Weather forecast, 11 A. M., 12 M., 5 P. M., 10 P. M.
Shipping news, 2:05 P. M.
Babson statistical service, 6 P. M.
Arlington official time, 1:55 A. M., 12 M., 9:52 P. M., 10 P. M.
Agricultural reports, 12 M. and 6 P. M.

W N O (Jersey City)
360 metres.

10:02 P. M.: A tuning test—Oscar Rauch, Dance Orchestra; Leonora Melvin, assisted by Oscar Rauch; Max Hettrig, assisted by Edward Shierick at the piano; Ida La Sham, assisted by sister, Ira, with Jack Vail at the piano.

Questions and Answers.

W. Sear, New York, writes: "I have a crystal set which for the past few weeks has been steadily growing more and more inefficient. Can you tell me what my trouble is?" Answer—Your crystal is probably getting old and is undoubtedly dirty; try cleaning it. Also clean the other instruments of your set and go over your connections very carefully.

X., New Jersey, writes: "Is it possible for me to hear the nightly programmes without an aerial? Our landlord will not permit me to erect one." Answer—Try your bedspring by hooking the antenna side of the receiving set to it and make a ground on the usual water pipe. Your location is such as to indicate close proximity to the broadcasting station and it is quite possible that you will get good results.

S. Appleby, New York, writes: "Can you tell me who WNO is? I have heard him several nights under 10 P. M." Answer—WNO is a broadcasting station of the Jersey Journal.

John Berlucchi, New York City: Would it be possible to step down 110 volt "AC" current to six volts by means of a transformer for lighting the filaments of the vacuum tube. Answer—It is possible, but not practical, and will cost a great deal more in the long run than a storage battery. You are very likely to burn out several VT's in the experiment.

Phil Mayott, Brooklyn—Kindly tell me the radius of a crystal set composed of a loose coupler, a fixed and variable condenser, a crystal detector and 2,000 ohm phones. Answer—Under normal conditions the radius of this set is about fifty miles. This is only approximate and is subject to variation caused by any number of things.

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NEWS OF N. Y. HIGH SCHOOLS.

PUPILS HERE ASKED TO HELP RUSSIAN SCHOOL CHILDREN

American Relief Administration
Gets Appeal for Books, Ink,
Pencils and Other Supplies

While pupils in the New York City high schools are busy themselves with the election of general organization officers and with preparations for dramatic and athletic activities, a letter received by the American Relief Administration, No. 42 Broadway, should suggest some more serious thought and action.

The School Council of Ivarine Children's Labor Colony in Russia, Inc., in a letter to the Relief Administration, a request to "please have some reach the American children in general and the school children in particular." The letter in part follows:

"We, children of the Work School Colony of Ivarine, containing eighty-six pupils, in age from eight to fifteen years, are suffering with our native land a hard moment which is probably known to you. Along with a general lack of sufficient clothing we are equally bereft of the most necessary school materials—copy books, pencils, ink, paper, colors, pencils for drawing, etc. The absence of these things is worse than hunger. We all know that education is necessary for our country. . . . Our sufferings would be greater if we were obliged to remain half educated. Knowing the sympathizing feelings of the great American Nation to our Russians, proved by the kind help given to the children of our provinces struggling from famine, we decided to ask you as friends to provide our school with necessary things."

ATHLETIC EVENTS IN N. Y. HIGH SCHOOLS

The twelve New York high school skaters, chosen to represent this city against the Chicago school boys Saturday, will leave for the "Windy City" Wednesday. The party will be in charge of Dr. Albert K. Aldinger, director of athletics in the Board of Education, and William W. Cohee, Chairman of the Citizens' Skating Committee. Dr. Aldinger's account of the meet will appear in the Evening World next Monday.

Manager Kaplan of the High School of Commerce Tennis Team called candidates and twenty students reported for first practice at the Armory, at 16th Street and Broadway. The veterans of the team are: Capt.

"Chappy" Raff, Aaron Guzy and Bert "Red" Raff. Alcock Diamond of last year's "sub" team remains. Ralph Adler, winner of the school tournament last October, is out for the team. Martin L. Wilson will again coach the racket wielders.

Dominick Mara, centre on the De Witt Clinton basketball team that won the Manhattan-Bronx-Richmond championship, has been elected Captain to lead next season's ball-cagers. The new Captain has been on the varsity two years.

Theodore Roosevelt.
The class representatives of Theodore Roosevelt High School, who form the Nominating Committee, met Thursday afternoon to select candidates for the general organization. The following students were nominated: President, James Nolan, 7-1; Vice President, Herman Burstein, 7-1; Edith Hart, 6-3; annex, Thomas Farrell, 3-20; Edward Mozzoni, 4-20; Assistant Treasurer (main building), Katherine McGowan, 6-1; Dorothy Davies, 4-2; Secretary, Joseph Lewandowski, 4-3; Marjorie Thayer, 3-3.

Grade representatives were also nominated. The candidates travelled to the annex Friday, the 10th, and delivered their speeches. Last Friday they addressed the students at the main building. The election will take place early this week.

George Washington.
George Washington High School's annual school festival and reunion on the eve of Washington's Birthday will be celebrated this year by a special programme to commemorate the birthday of Washington and to present a brief pageant of America's Making.

The school is to assemble at 1:30 o'clock to-morrow afternoon at the 23d Regiment Armory, Broadway and 168th Street. The programme will centre about three episodes, a scene at Mount Vernon when Washington retired from the Presidency, one at the time of the Emancipation Proclamation, and a third showing the rejoicings of Armistice Day.

Wadleigh.
Wadleigh's "Official Valentine" has appeared. She is Kate Douglas Wiggin, author of the "Rebecca Stories." "Mother Carey's Chickens" and others. For many years Miss Wiggin has paid visits to Wadleigh on St. Valentine's Day, but this was her first appearance in four years. She was welcomed enthusiastically by the students at both assemblies and entertained them by reading from her book "The New Chronicles of Rebecca" and a story called "The Quilt of Happiness" which has never been published in book form, although it has appeared in a magazine. After the assembly Gladys Elias, President of the General Organization, presented her with a bouquet of roses as a token of the school's appreciation. The Senior Classes Wednesday elected the following class officers: President, Florence Frank; Vice President, Phyllis Winter; Secretary, Evelyn Hurley.

Clarkson Cowl, President of James A. Hearn & Son and Advisory Council of the University School of Retailing, has offered through that school prizes for essays on problems of retail selling. The prizes, to be known as the James A. Hearn & Son prize, consist of a first prize of \$200, a second of \$150, a third

of \$100 and two fourth prizes of \$50 each. All high school pupils above the first year may compete with essays on the following subjects: Service, its meaning to the customer, and its importance to the merchant; life careers offered in retailing; the position of the retail merchant in the economic field, and the development of ethical standards in retailing.

Edwender Childs.
Nominations were made this morning in all four assemblies of the main building for officers in the general organization. In the speeches to be made at the Annex assemblies this week, to-morrow at Wadleigh, Thursday at Bedford Park and Friday at Fordham, a new system will be instituted. Each of the candidates for President will speak for a candidate for Vice President, and one for Secretary.

Last week a special assembly was held to honor Lincoln and Washington. Principal Blakely spoke to the student body of the ideals of the two men and urged the students to follow them as much as possible. Alice Neuwinger delivered a selection on Lincoln, and following her, Ada Montuori gave one on Washington.

Commerce.
The Commerce Economics Club, long inactive, is once more on its feet through the work of the members and the help of Job B. Golan, the faculty advisor. The club plans to publish a Commerce economics newspaper. The officers of the club are Abraham A. Storch, President; L. Lubing, Vice President; M. Schneider, Secretary.

Thursday and Friday General Organization officers were nominated. Principal Buttrick spoke on the General Organization's work since the beginning. Honorary President of the General Organization, William S. Schlauch, introduced Noah Braunstein, who spoke for the only candidate for the Presidency, Irving Berkehammer, following this, Nathan Witt spoke for "Mickey" Hochauer for Vice President, and "Lou" Levin for Stone, Plaisant for Rosenbaum and Horowitz for the Presidency. Then Joseph Waldman nominated Sol Gottlieb, John Doe nominated Aric for Secretary. As a tall-order, Nat Elman nominated Manie Waldman, and Adrian Baumgart nominated Capt. Moe Levine for student representative respectively. Elections will be held Friday.

Washington Irving.
Among the fourteen high school pupils from eleven schools who have been awarded scholarships by the School Art League are Anna Kovack, Anita Brass and Lillian Raffaele of Washington Irving.

In the first assembly Friday, six girls, selected by their fellow students, participated in a prize speaking contest inaugurated by Mrs. Ida Benney Judd. Mrs. Judd offered as a prize Chernwood's "Life of Lincoln," and was present at its award. She brought with her to the school three judges, Mrs. Koop, Mrs. Margaret Swift, and Alfred L. Becker. The contestants were: Rae Halpern, Marguerite Markowitz, Priscilla Baynes, Elizabeth Ginsberg, Alice Griffler, Helen Strumfeld, Miss Marguerite Markowitz of section 102 was declared winner.

Morris.
The Denbigh Literary Society is champion of the school. Friday the Qui Vive and Denbigh debated for the championship. The winning Denbigh

team was Miss Schwartzman, Isidore Hermer, Abraham Levitt. The Qui Vive team was Max Rubin, Williams, Benjamin Green.

The chess team, after playing three draws, lost the championship of the city to Commerce. The team was Roman, Frenowitz, Steinberg and Halpern.

Under the leadership of Mr. Ketchum and Miss Scott of the faculty, "service volunteers" are planning their work of helping the school.

Edwin R. Tracy, head of the music department, has purchased extra copies of the song book used at Morris and is selling them to the pupils. In the assembly, Mr. Tracy used the organ accompanied a Gail-Curel record.

This week the students running for office in the Morris organization will deliver their speeches. The candidates have already flooded corridors and lunch rooms with artistic posters.

De Witt Clinton.
Prof. Franklin Moon of the New York State College of Forestry spoke on "Forest Conservation" at the De Witt Clinton Assembly Friday, illustrating his remarks by lantern slides. Prof. Moon explained the importance and necessity of forest conservation, declaring that a shortage in the supply of forest products would be as disastrous to the Nation as a food famine.

The senior class has chosen its officers. Frederick Kraut, last term's President of the General Organization, was unanimously elected President of the class. The fight for the Vice Presidency narrowed down to Arthur Straus, Irving Tweedy and Carmelo Candeloro. Tweedy was elected on the second ballot. Harry Epstein was elected Secretary, winning by three votes over Charles Ciner. Thorwald Nin beat Andrew Jordan by ten votes for Treasurer.

The roster of the Dotey Squad, the most important disciplinary organization in Clinton, is as follows: Commissioner, Aaron I. Dotey; Deputy Commissioner, Paul A. Thompson; Captain, Ralph K. Behr; First Lieutenant, Edward M. Kline; Second Lieutenant, Abraham A. Antov; Sergeant, Henry Abrahamson; Squad, Arthur Straus, Charles Ciner, Lawrence H. Singer, S. Chalf, Jesse Aaron, Arthur Block, H. Kreindler, Cecil Cooke, Edward Mollie, M. Feldman, Sidney Golobin, Jerry Strauss, Morris Hiskin, M. Dym, Thorwald Nin, L. Obermeyer, M. Ledner, N. Pritchard, H. Harawitz, S. Levinsky, H. Rosenman, L. Breiter, L. Joughlin, H. Silverman, C. Kopolsky, Morris Chamurich, P. Berman, C. Schurmacher, G. Gilmer, M. Heller, H. Breslow, S. Rubinstein, Milton B. Sersonow, Jules Harach, L. Traubner, C. Seigfried, N. Waterman, H. Baer, H. Abel, L. Limonick, L. Behr, S. Itus, H. Englander, D. Glass, Ellis Gordon, E. Chalf, A. Farer, W. Feldman, Milton.

Some interesting statistics have been compiled by the Clinton Service Club in connection with a Go-to-College drive to be launched this term. This census revealed the fact that less than two-thirds of the students in the main building intended to go to college. The following are the figures:
Number of pupils going to college, 1,900; (a) for a profession, 1,600; (b), for business, 300.
Number doubtful, 875; (a), for a profession, 250; (b), for business, 125.
Number not going, 500.

SHIP NEWS INFORMATION

Due To-Day.
Noordam, Plymouth.....Feb. 17
Rosacliff, Halifax.....Feb. 17
American Legion, Rio.....Feb. 17
Alamara, Port Limon.....Feb. 17
Carnegie, Guantanamo.....Feb. 17
Oedre, Liverpool.....Feb. 17
S. de la Florida, Havana.....Feb. 17
Huron, Turks Island.....Feb. 17
Kronland, Antwerp.....Feb. 17
Philadelphia, Curacao.....Feb. 17
Porto Rico, San Juan.....Feb. 17

Due To-Morrow.
Hudson, Bremen.....Feb. 18
Medina, Nuevitas.....Feb. 18
Seydlitz, Bremen.....Feb. 18
West Lashaway, Lisbon.....Feb. 18
S. de la Florida, Havana.....Feb. 18
United States, Christiana.....Feb. 18

Due Wednesday.
Homer, Southampton.....Feb. 19
S. de la Florida, Havana.....Feb. 19
Mount Clay, Hamburg.....Feb. 19

Due Thursday.
Pt. Victoria, Bermuda.....Feb. 21
Raguaya, Havana.....Feb. 21

Due Friday.
Aquitania, Southampton.....Feb. 19
Chicago, Havana.....Feb. 19
Orduña, Southampton.....Feb. 19

Due Saturday.
Morro Castle, Havana.....Feb. 20
Seydlitz, Bremen.....Feb. 20
Conte House, Glasgow.....Feb. 20

Sail To-Day.
Nathur, Copenhagen.....Feb. 19
Sail To-Morrow.
Paris, Havre.....Feb. 20
Centennial State, London.....Feb. 20
Gullespi, Vardø.....Feb. 20
Naples.....Feb. 20
Aale, Lisbon.....Feb. 20
Rochambeau, Havre.....Feb. 20
Gothland, Antwerp.....Feb. 20
Guiana, Rotterdam.....Feb. 20
Nassau, Bremen.....Feb. 20
Hypatia, Cape Town.....Feb. 20

Sail Wednesday.
Polonia, Danzig.....Feb. 21
Pt. Hamilton, Ber.....Feb. 21
Turrialba, Kingston.....Feb. 21

Sail Thursday.
Wuerttemberg, Ham.....Feb. 21
Borsig, Hamburg.....Feb. 21
Rosalia, Halifax.....Feb. 21

Sail Friday.
Eaparta, Belise.....Feb. 21
Hogota, Kingston.....Feb. 21
Genda, P. Hodges.....Feb. 21
Cristobal.....Feb. 21
Stavangerfjord, Ber.....Feb. 21

FOREIGN BORN BLOC IS BEING PLANNED

George A. Schreiner, Secretary, Refuses to Discuss Meeting Called for Feb. 24.

WASHINGTON, Feb. 20.—Another Washington Conference, this time with the intent to mass foreign-born voters into a hyphenate bloc, will be held, beginning Feb. 24. The conference is also designed to save the country from British domination, for, according to the agenda, British influence is all-powerful with the Harding Administration.

The only name so far mentioned in connection with the call is that of George A. Schreiner of New York. Apparently he is the secretary or advance agent of the proposed gathering.

He said any discussion would have to come from the "committee," but he could not remember the names of any members here or in New York. He admitted that the committee is "spread all over the country," but he declined to talk about it further or give details of his own connection with it.

Mr. Schreiner spent the first year of the war as correspondent for the "Associated Press in Germany, Austria and Turkey.

HIGH SCHOOLS NEED ART SUBSTITUTES

An examination for substitute teachers of art in the high schools will be held in the near future. The need for additional teachers of art is pressing. Dr. James P. Haney, director of art in high schools, said: "Every candidate applying for a substitute's license in art must be a high school graduate and have at least two years of normal art instruction in some school for training of art teachers. It is of manifest advantage, also, that a candidate shall have had experience in teaching. The examination includes a practical and oral test, and is held by the Board of Examiners. A candidate must show ability to draw and design, and to conduct class lessons."

Candidates should make out suitable application blanks in the office of the Board of Examiners, Room 422, 509 Park Avenue, Manhattan. They will later be notified of the date of the examination and must, at the time of the examination, be prepared to submit evidence of their scholastic and art education, in the form of diplomas or other certificates.

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Sizes 29 to 50 waist.

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A large assortment of men's and young men's wool trousers in a number of wanted shades. Worsteds, cassimeres, flannels and serges. Checks, stripes and plain colors. Good for everyday wear.

Sizes 28 to 50.

See Page 23 for Other Hearn Advertisings